

## CLAIMS

1. A method of forming an oscillator comprising:
  - 5 forming an oscillator having a delay including forming the oscillator to generate a frequency; and forming the oscillator to generate the delay so that changing the frequency generates an inversely proportional change in the delay.
  - 10 2. The method of claim 1 wherein forming the oscillator to generate the delay so that changing the frequency generates the inversely proportional change in the delay includes forming the oscillator to generate the inversely proportional change in the delay within elements of a feedback path of the oscillator.
  - 20 3. The method of claim 2 wherein forming the oscillator to generate the inversely proportional change in the delay within elements of the feedback path of the oscillator includes forming the oscillator to generate a bias current of the elements of the feedback path.
  - 25 4. The method of claim 3 wherein forming the oscillator to generate the bias current of the elements of the feedback path includes generating the bias current so that changing the frequency generates a proportional change in the bias current.
  - 30 5. The method of claim 1 wherein forming the oscillator to generate the delay so that changing the frequency generates the inversely proportional change in the delay includes forming a saw-tooth oscillator to generate the delay.

6. The method of claim 1 wherein forming the oscillator to generate the delay so that changing the frequency generates the inversely proportional change in the delay includes forming a multiple saw-tooth oscillator  
5 to generate the delay.

7. The method of claim 1 wherein forming the oscillator having the delay includes coupling a comparator in a feedback path of the oscillator.

10 8. The method of claim 7 wherein coupling the comparator in the feedback path of the oscillator includes forming the oscillator to generate the delay within the comparator.

15 9. The method of claim 7 wherein coupling the comparator in the feedback path of the oscillator includes forming a bias generator of the comparator to generate a bias current of the comparator so that changing the  
20 frequency generates a proportional change in the bias current.

25 10. A method of operating an oscillator comprising:  
generating an oscillating signal having a frequency  
at an output of an oscillator; and  
generating a delay of the oscillator so that changes  
in the frequency generate an inversely proportional change  
in the delay.

30 11. The method of claim 10 wherein generating the delay of the oscillator so that changes in the frequency generate the inversely proportional change in the delay includes generating a bias current of elements in a  
35 feedback path of the oscillator including generating the bias current proportional to a bias current used to establish the frequency.

12. The method of claim 10 wherein generating the delay of the oscillator so that changes in the frequency generate the inversely proportional change in the delay
- 5 includes changing a bias current of elements in a feedback path of the oscillator including changing the bias current proportionally to changes in the frequency.
13. The method of claim 10 wherein generating the oscillating signal having the frequency at the output of the oscillator includes using a saw-tooth oscillator to generate the oscillating signal.
14. The method of claim 10 wherein generating the delay of the oscillator so that changes in the frequency generate the inversely proportional change in the delay includes generating a delay of a comparator that is in a feedback path of the oscillator.
- 20 15. The method of claim 14 wherein generating the delay of the comparator includes biasing the comparator with a bias current that is used to establish the frequency.
- 25 16. The method of claim 15 wherein biasing the comparator with the bias current that is used to establish the frequency includes changing the bias current to change the frequency and the delay.

17. An oscillator comprising:
  - an output for generating an on oscillating signal;
  - a feedback path for receiving the oscillating signal, the feedback path having an active element that has a delay; and
  - a bias generator coupled to provide a bias current to the active element, and coupled to receive a frequency control signal and responsively generate the bias current.
18. The oscillator of claim 17 wherein the feedback path for receiving the oscillating signal, the feedback path having the active element includes a comparator coupled to receive the oscillating signal.
19. The oscillator of claim 18 wherein the bias generator coupled to provide the bias current includes the bias generator coupled to generate the bias current responsively to a value of a resistor.
20. The oscillator of claim 18 wherein the bias generator coupled to provide the bias current includes the bias generator coupled to provide a current of a current source of the comparator.